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Specification

TITLE OF INVENTION

Snap Bat

CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

REFERENCE TO A MICROFICHE APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

BATS, Inc. conducted hitting instruction for baseball/softball for six years. Players had difficulty grasping the concept of full extension during the swing of the bat. Full extension is accomplished by achieving maximum bat speed at the point where the bat makes contact with the ball. A training aid was needed to demonstrate the concept.

The goal was to create a device that would only make a distinct noise at the proper point of bat contact with the pitched ball, the point of full extension. A batter's swing is very fast and thus difficult to visually examine and evaluate, even for an experienced hitting instructor. Your ears are very accurate at locating the point where the snap occurs. This promotes a muscle memory teaching point for hitters.

A second goal was to create a light weight device. Repeated swings with a standard weight bat can produce muscle fatigue and possibly even injury. Repetition in a fatigued state does not build the proper muscle memory, so it was important that the training aid be light weight.

Note: the device is not designed to make contact with a pitched ball. It is for practice swings only.

BRIEF SUMMARY OF THE INVENTION

After considerable research and testing, it was discovered that the unique design of the Snap Bat met both the goals. The "snapping" sound at full extension coupled with the proper point of bat contact with the pitched ball, was a clear indication of a fundamentally sound swing. Poor swings, such as "sweeping" or "casting" would not produce a snap or the snap would be clearly too early or too late. Further research revealed that the Snap Bat also could demonstrate advanced hitting techniques, e.g. "hitting to the opposite field" or "pulling the ball." This means that full extension and ball contact takes place either slightly later in the swing (opposite field) or slightly earlier in the swing (pulling the ball). Both the hitter and the instructor or parent can clearly hear the snapping sound and thus accurately analyze each swing.

The complete Snap Bat weighs only 12 ounces, considerably less than a standard baseball/softball bat typically weighing 22 to 30 ounces. It is critical that the hitter be able to repeat their swing at maximum speed without the risk of injury. Proper repetition is the key to developing a proper swing.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

Figure 1., page 1 of drawings

This is a complete view of the entire Snap Bat. It is composed of six (6) individual pieces, each lettered with a listing of the appropriate dimensions. The six (6) pieces are in the order of placement in the final assembly.

DETAILED DESCRIPTION OF THE INVENTION

Other Hitting Aid Products:

Several devices have been patented in the hitting training aid area, specifically using a "bat" style.

U.S. Pat. No. 5,360,209, by Mollica, entitled "BATTING TRAINING DEVICE" discloses a batting training device which includes a handle and a weighted member movable relative to the handle along a longitudinal extending rod in response to the acceleration of the batting training device along a portion of a contact hitting swing.

U.S. Pat. No. 6,050,908, by Muhlhausen; Harry B., entitled TRAINING BAT" describes a training bat consisting of a detachable elongated contact

surface member joined with a handle member and a shock absorbing coupler. This greatly reduces the impact forces transferred to the hitter's hands.

U.S. Pat. No. 4,898,396, by Anderson, entitled "TRAINING BAT" discloses a training bat comprising a hollow cylindrical bat having a handle and a striking end. A disk is positioned in the interior of the bat at substantially the center of the bat. Additionally, a plate is positioned in the interior of the bat at the end of the striking end of the bat. An object is slidably coupled in the interior of the bat between the disk and plate. The training bat is essentially shaped in the form of a conventional bat. A weight is coupled within the training bat wherein the weight extends from the disk toward the end of the bat in close proximity to the handle. The weight is coupled to a resilient member so that the resilient member bears weight against the weight to keep the weight from moving.

U.S. Pat. No. 4,682,773, by Pomilia, entitled "BASEBALL TRAINING BAT" discloses a bat having a uniform outside diameter, the entire length thereof. The bat is essentially an elongated tubular member made of iron pipe material commonly referred to as 3/4 inch pipe. The bat is filled with foamed material.

U.S. Pat. No. 4,555,111, by Alvarez, entitled "PRACTICE BAT" discloses a practice bat comprising a handle portion and a weighted end portion interconnected by a resilient spring. When the bat is swung, the momentum of the weighted end portion will cause it to lag behind and then move ahead

of a longitudinal at rest axis of the handle portion causing the player's wrists to break or bend.

U.S. Pat. No. 4,399,996, by Boyce, entitled "PRACTICE BAT" discloses a baseball practice bat which includes a head portion and a grip portion. The head portion and grip portion are bridged together via an articulating joint which provides connected flexure or resilience. Such articulating joint is formed by a still coil spring which is embedded in a potting resin such as an epoxy resin with a suitable hardener.

U.S. Pat. No. 3,246,894, by Salisbury, entitled "BASEBALL TRAINING BAT OR SIMILAR ARTICLE" discloses a bat having a generally cylindrical tapered barrel portion joined to a handle portion having a flared butt end joined together via a central section. The central section has a small diameter to minimize the hitting area. In one embodiment, the central section is a torsion bar which converts shock forces such as the impact of the ball on the barrel portion of the bat to prevent imparting of the shock forces to the hands of the batter on the handle portion.

A review of these devices shows that none of them are designed to work on a sound or auditory basis. In addition, they are either a standard weight or even heavier in some cases. This limits their use for repetition.

2. Structure of the Snap Bat:

Figure 1., page 1, shows the six parts of the Snap Bat. It consists of a foam rubber handle (A), and a short piece of plastic pipe (B), that while contained, is free to slide inside a hollow plastic tube

(C). A solid plastic plug (E) is located inside the tube at the end opposite the handle. The plug is attached to the inside of the tube by epoxy glue and a steel pin (D) that is drilled through both the tube and the plug. The plug end of the tube is covered with an end cap (F) that is attached with epoxy glue. The cap covers the pin ends and prevents the pin from coming loose. The dimensions of each part are listed in Figure 1., page 1.

The short piece of plastic pipe (B) is called the "snapper" and makes the characteristic and critical noise when it hits the plug.

3. Manufacturing Process:

1. Schedule 40, ¾" PVC tubing is cut with a table saw into 32 inch lengths with square ends. The pipe has been previously dyed green at the PVC manufacturing facility. The color is for marketing purposes only and has no mechanical function. This is Part C, Figure 1., page 1.
2. PEX pipe or plastic hot/cold water pipe is cut with hand shears into 3 inch lengths with square ends. This is Part B, Figure 1., page 1.
3. 3/32 inch steel rod is cut with hand shears into 1.05 inch lengths with square ends. This is Part D, Figure 1., page 1.
4. Grade 1, PVC, ¾ inch diameter solid rods are sanded by hand to abrade the surface to increase adhesion when glued. The rods are then cut into 1.25 inch plugs with square ends. This is Part E, Figure 1., page 1.

5. Each plug (E) has a 1/8 inch hole drilled lengthwise using a drill press to release air pressure when the cap is applied. This is Part E, Figure 1., page 1.
6. Epoxy glue is applied to the inside of one end of the PVC tube and the plug is inserted and twisted to spread the glue evenly. The tube is then placed plug down in a drying rack. A small screw in the base of the rack, at each tube location, pushes the plug up into the tube approximately ¼ inch. This creates an air gap between the plug and the end cap (F).
7. After 48 hours drying time, each tube is removed from the rack and has a 3/32 inch hole drilled 5/8 inch from the plug end of the tube. The hole is perpendicular to the tube and passes through both sides of the tube and the plug, through the centerline.
8. A steel pin, 3/32 inch in diameter and 1.05 inches in length is pushed through the perpendicular hole in the end of the tube and plug assembly. The glue and pin prevents the plug from coming loose and represents the final assembly of the tube and plug section. This is Part D, Figure 1., page 1.
9. A standard, off the shelf, ¾ inch PVC end cap is glued on the plug end of the tube and allowed to dry for 24 hours. This is Part F, Figure 1., page 1.
10. One 3 inch hot/cold water pipe piece is inserted into the tube from the handle end. This is Part B, Figure 1., page 1.
11. A foam rubber handle is pushed on the open end of the tube (C) until seated. This is Part A, Figure 1., page 1.

12. Each completed Snap Bat is swung to make sure it works and is ready for shipment.